

City Of Garden Grove

INTER-DEPARTMENT MEMORANDUM

To: Matthew J. Fertal From: Keith G. Jones
Dept: City Manager Dept: Public Works
Subject: 2010 DRINKING WATER Date: September 28, 2010
 PUBLIC HEALTH GOAL REPORT

OBJECTIVE

To provide City Council with information concerning the City's 2010 Drinking Water Public Health Goal Report.

BACKGROUND

In 1974, Congress passed the Safe Drinking Water Act to ensure that municipalities provide safe, clean drinking water. The Act sets the mandatory and enforceable levels of constituents in water known as Maximum Contaminant Levels (MCLs). The range and value of these constituents must be communicated to customers annually in our Water Quality Report. Staff prepared and mailed this report to water customers during the month of June 2010, as required by California Department of Public Health (CDPH).

Additionally, California's Health and Safety Code Section 116470(b) requires a separate report be generated detailing any contaminants that exceed the Public Health Goal levels (PHG) set by the state Office of Environmental Health Hazard Assessment (OEHHA), referred to as the Public Health Goal Report. If there are no exceedances of the Public Health Goals, no report is required. Also, any Public Health Goal Report is not required to be sent to residents, however it must be made available upon request.

DISCUSSION

The City of Garden Grove's water supply continues to be in full compliance with all enforceable standards required by state and federal regulatory agencies.

Public Health Goals (PHGs) established by the OEHHA and Maximum Contaminant Level Goals (MCLGs) established by the United States Environmental Protection Agency (USEPA) are based solely on public health risk considerations, being set at levels where the health risks are very low, or zero. The determinations of health risk at these low levels are frequently theoretical. The apparent purpose of the

Public Health Goal Report is to give water system customers access to information on levels of contaminants even below the enforceable mandatory MCLs. PHGs and MCLGs are not enforceable.

Additionally, agencies that operate water systems are required to report any exceeded PHGs or MCLGs to their governing bodies and to hold a public hearing to accept and respond to public comment. The Public Health Goal Report is only required if a PHG was exceeded on a three (3) year reporting cycle.

ARSENIC, URANIUM, TOTAL ALPHA AND TOTAL COLIFORM BACTERIA PUBLIC HEALTH GOAL EXCEEDANCES

For the 2010 Public Health Goal Report, four (4) contaminants, arsenic, uranium, total alpha and total coli form bacteria are required to be reported to governing bodies and consumers because they exceed the PHGs although none of the samples exceeded any enforceable regulatory levels.

FINANCIAL IMPACT

There is no financial impact to the city. The City of Garden Grove meets or exceeds all enforceable standards required by state and federal regulatory agencies.

RECOMMENDATION

It is recommended that City Council:

- Conduct the public hearing and respond to public comment on the Public Health Goal Report.
- Approve the Public Health Goal Report as submitted.

 KEITH G. JONES

Director of Public Works

By:  David E. Entsminger
Water Services Manager

Approved for Agenda Listing


Matthew Feral
City Manager

Attachments: 1) Public Health Goal Report 2010
2) 2010 Water Quality Report

Public Health Goal Report 2010

Background:

The California Health and Safety Code specifies that water utilities that serve more than 10,000 service connections prepare a special report every three (3) years by July 1st if any water quality measurements have exceeded specific Public Health Goals (PHGs).

PHGs are non-enforceable goals established by the Cal-EPA's Office of Environmental Health Hazard Assessment (OEHHA). Not all constituents have been assigned a PHG. In those cases where the OEHHA has not adopted a PHG for a constituent, water suppliers use the Maximum Contaminant Level Goals (MCLGs are the federal equivalent to PHGs) adopted by the United States Environmental Protection Agency (USEPA). Only regulated constituents that have either a PHG or MCLG set and have a California primary drinking water standard are addressed.

The PHGs and associated MCLGs are not enforceable and are not required to be met by any public water system.

PHGs are based solely on public health risk considerations. None of the practical risk-management factors that are considered by the USEPA or the California Department of Health Services (CDPH) in setting drinking water standards (MCLs) are considered in setting the PHGs. These factors include analytical detection capability, treatment technologies commercially available, benefits of constituent reduction, and the estimated cost to reduce constituent levels.

If a constituent was detected in the City's water supply between 2007 and 2009 at a level exceeding an applicable PHG or MCLG, this report provides the information required by law. Included within this report:

- The numerical public health risk associated with the MCL and the PHG or MCLG.
- The category or type of risk to health that could be associated with each constituent.
- The Best Available Treatment (BAT) technology available that could be used to reduce the constituent level.
- An estimate of the cost to install that treatment if it is appropriate and feasible.

Guidelines Followed:

The Association of California Water Agencies (ACWA) formed a workgroup that prepared guidelines for water utilities to use in preparing these newly required reports. The ACWA guidelines were used in the preparation of our report.

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Best Available Treatment Technology and Cost Estimates:

Both the USEPA and CDPH adopt what are known as Best Available Technologies (BATs), which are the best known methods of reducing contaminant levels to the MCL. Costs can be estimated for such technologies. However, since many PHGs and all MCLGs are set much lower than the MCL, it is not always analytically possible nor financially feasible to determine what treatment is needed to further reduce a constituent downward to or near the PHG or MCLG, many of which are set at zero.

Constituents Detected that Exceed a PHG or a MCLG:

The following is a discussion of constituents that were detected in one or more of our drinking water sources at levels above the PHG, or if no PHG, above the MCLG. PHG or MCLG exceedances were found for: Arsenic, Natural Uranium, Total Alpha, and Total Coliform Bacteria.

Arsenic:

Arsenic has been detected at averages of 2.6 ppb in groundwater. The CDPH MCL for Uranium is 10 ppb, and the PHG for Arsenic is 0.004 ppb. Although levels were detected above the PHG, at no time was the MCL exceeded.

Best Available Technology:

BAT for Arsenic removal is Reverse Osmosis (RO). However, this treatment technology is costly and may be impractical in high flow situations. This treatment technology also produces waste effluent that may be problematic with regard to disposal.

Cost Estimate:

The City of Garden Grove has 11 individual well sites, each of which provides a variable amount of water to the distribution system. Typically, not all wells operate at the same time, nor do all wells operate 24 hours a day. Estimates are approximate, using the ACWA guidelines under "Cost Estimates for Treatment Technologies" for RO.

The City has determined that the most efficient and effective method would be to install RO removal systems at each of the well sites. Estimated costs to install and operate eleven separate RO systems would be approximately 18.3 million dollars annually. This translates into an annual cost of \$537 per service connection for the life of the treatment system. It should be noted that even with the installation of RO treatment systems, it is unlikely that the endpoint reduction of Arsenic will be sufficient to meet PHGs.

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Health Risk Category:

This radiological constituents health risk has been classified as a "Carcinogen". Arsenic has been shown to cause cancer in laboratory animals when exposed to high levels over their lifetimes. The CDPH has set the drinking water standard for Arsenic at 10 micrograms per liter (ppb) to reduce the risk of cancer or other adverse health effects. Cancer risk is stated in terms of "excess" cancer cases per million population. Arsenic has been assigned at 1×10^{-6} cancer risk, this means that there is a hypothetical one (1) excess cancer case per one million (1,000,000) population for a lifetime of exposure.

Uranium:

Uranium has been detected at averages of 9.0 pCi/L in groundwater. The CDPH MCL for Uranium is 20 pCi/L, and the PHG for Uranium is 0.43 pCi/L. Although levels were detected above the PHG, at no time was the MCL exceeded.

Best Available Technology:

See arsenic.

Cost Estimate:

See arsenic.

Health Risk Category:

See arsenic.

Total Alpha:

There is no PHG for total alpha, but the federal MCLG established by the EPA is 0 pCi/L. The CDPH MCL for total alpha is 15 pCi/L. Levels were detected in our groundwater at an average of 9.0 pCi/L. All levels were below the MCL.

Best Available Technology:

See arsenic.

Cost Estimate:

See arsenic.

Health Risk Category:

Total Alpha has been classified as a "Carcinogen" for Health Risk Category. Because the MCLG for Total Alpha is 0 pCi/L, the numerical cancer risk at the MCLG level is also zero.

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Total Coliform Bacteria:

Coliforms have been detected at an average of 0.7% of all samples taken in one month in groundwater. The CDPH MCL for coliforms is 5%, and the PHG 0.5%. The single instance where a positive sample was initially found indicated an absence of pathogens in follow-up samples. The data indicated that this was an isolated incident, and the quality of the water in the distribution system was never compromised.

Best Available Technology:

BAT for coliforms removal is maintenance of a disinfectant residual throughout the distribution system. However, this treatment technology is already in use by the City of Garden Grove so no additional action for coliform bacteria is recommended. Other equally important measures that we have implemented include: an effective cross-connection control program, an effective monitoring and surveillance program and maintaining positive pressures in our distribution system.

Health Risk Category:

Because coliform is only a surrogate indicator of the potential presence of pathogens, it is not possible to state a specific numerical health risk. While USEPA normally sets MCLG's "at a level where no known or anticipated adverse effects on person would occur", they indicate that they cannot do so with coliforms.

Cost Estimate:

Since the City of Garden Grove has already taken all of the steps described by CDPH as "best available technology" for coliform bacteria in Section 6447, Title 22, CCR., no estimate cost has been included.

Recommendations for Further Action:

The City of Garden Grove meets all CDPH and USEPA drinking water standards set to protect public health. Costly treatment processes would be required to further reduce the levels of the constituents identified in this report that are already significantly below the health-based MCLs established to provide "safe drinking water". The effectiveness of the treatment processes to provide any significant reductions in constituent levels at these already low values is uncertain. The health protection benefits of these further hypothetical reductions are not at all clear and may not be quantifiable. Therefore, no action is proposed.

Attachment: California MCLs and PHGs and Federal MCLGs List

California MCLs and PHGs and Federal MCLGs

Contaminant	California PHG	California MCL	Federal MCLG
Arsenic	0.000004 mg/L	0.01 mg/L	0
Uranium	0.43 pCi/L	20 pCi/L	0
Gross Alpha	0	15 pCi/L	0
Total Coliform	0	5%*	0

*5% of all samples taken in a given month.